

## LIST OF CLAIMS / AMENDMENTS

Please amend claims 1, 21, 38, 39, 46, and 54 as shown herein.

Claims 1-57 are pending and are listed following:

1. **(CURRENTLY AMENDED)** A method comprising:

dynamically determining present members of a load-balancing cluster  
which includes nodes and a node manager; and

monitoring application-layer availability of one or more members of the  
cluster ~~as such availability is observed from a client perspective, the monitoring~~  
being performed by one or more clients outside of the cluster which are  
communicatively linked to the node manager in the cluster, such that the  
monitoring is from a client perspective to detect an error that may impact the  
application-layer availability as it appears to the one or more clients from outside  
of the cluster.

2. **(ORIGINAL)** A method as recited in claim 1 further comprising  
exocusterly controlling activity state of the members of the cluster.

3. **(ORIGINAL)** A method as recited in claim 1 further comprising  
exocusterly and selectively deactivating one or more active members of the  
cluster.

1           4.    **(ORIGINAL)** A method as recited in claim 1 further comprising,  
2 based upon the monitoring, identifying one or more active members of the cluster  
3 that are presently overwhelmed at the application-layer.

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5           5.    **(ORIGINAL)** A method as recited in claim 1 further comprising:  
6 based upon the monitoring, identifying one or more active members of the  
7 cluster that are presently overwhelmed at the application-layer;  
8 exocusterly deactivating one or more members identified by the  
9 identifying.

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11           6.    **(ORIGINAL)** A method as recited in claim 1 further comprising  
12 exocusterly and selectively activating one or more inactive members of the  
13 cluster.

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15           7.    **(ORIGINAL)** A method as recited in claim 1 further comprising,  
16 based upon the monitoring, identifying one or more inactive members of the  
17 cluster that are not presently overwhelmed at the application-layer.

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19           8.    **(ORIGINAL)** A method as recited in claim 1 further comprising:  
20 based upon the monitoring, identifying one or more inactive members of  
21 the cluster that are not presently overwhelmed at the application-layer;  
22 exocusterly activating one or more members identified by the identifying.

1           **9. (ORIGINAL)** A method as recited in claim 1 further comprising:

2           based upon the monitoring, identifying one or more active members of the  
3 cluster that are presently overwhelmed at the application-layer and identifying one  
4 or more inactive members of the cluster that are not presently overwhelmed at the  
5 application-layer;

6           exocusterly deactivating one or more active members identified by the  
7 identifying;

8           exocusterly activating one or more inactive members identified by the  
9 identifying.

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11           **10. (ORIGINAL)** A method as recited in claim 1 further comprising  
12 determining a present activity state of members of the cluster.

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14           **11. (ORIGINAL)** A method as recited in claim 1 further comprising:  
15 determining a present activity state of members of the cluster;  
16 tracking and persisting the activity states of the members of the cluster.

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18           **12. (ORIGINAL)** A method as recited in claim 11, wherein the activity  
19 states include cluster states.

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21           **13. (ORIGINAL)** A method as recited in claim 11 further comprising  
22 reporting a present activity state of one or more members of the cluster.

1           14.    **(ORIGINAL)** A method as recited in claim 11 further comprising  
2 reporting historical record of the activity states of one or more members of the  
3 cluster.

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5           15.    **(ORIGINAL)** A method as recited in claim 11 further comprising  
6 reporting a present application-layer state of one or more members of the cluster.

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8           16.    **(ORIGINAL)** A method as recited in claim 11 further comprising  
9 reporting historical record of the application-layer states of one or more members  
10 of the cluster.

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12           17.    **(ORIGINAL)** A method as recited in claim 1, wherein the  
13 monitoring comprises monitoring in one or more different application-layer  
14 protocols.

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16           18.    **(ORIGINAL)** A method as recited in claim 1, further comprises,  
17 based upon the monitoring, determining the application-layer availability of one or  
18 more members based upon an indicator of such availability, the indicator sent  
19 from a member being monitored.  
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1           **19. (ORIGINAL)** A method as recited in claim 1, further comprises:

2           based upon the monitoring, determining the application-layer availability of  
3           one or more members based upon a indicator of such availability, the indicator  
4           sent from a member being monitored;

5           the member being monitored determining such availability and generating  
6           such indicator.

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8           **20. (ORIGINAL)** A computer-readable medium having computer-  
9           executable instructions that, when executed by a computer, perform the method as  
10          recited in claim 1.

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12          **21. (CURRENTLY AMENDED)** A method comprising:

13          monitoring application-layer availability of members of a load-balancing  
14          cluster which includes nodes and a node manager, as such availability is observed  
15          from a client perspective the monitoring being performed by one or more clients  
16          outside of the cluster which are communicatively linked to the node manager in  
17          the cluster, such that the monitoring is from a client perspective to detect an error  
18          that may impact the application-layer availability as it appears to the one or more  
19          clients from outside of the cluster; and

20          exocusterly controlling activity state of the members of the cluster.  
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1           **22. (ORIGINAL)** A method as recited in claim 21, wherein the  
2 controlling comprises selectively deactivating one or more active members of the  
3 cluster.

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5           **23. (ORIGINAL)** A method as recited in claim 21, wherein the  
6 controlling comprises, based upon the monitoring, identifying one or more active  
7 members of the cluster that are presently overwhelmed at the application-layer.

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9           **24. (ORIGINAL)** A method as recited in claim 21, wherein the  
10 controlling comprises:

11           based upon the monitoring, identifying one or more active members of the  
12 cluster that are presently overwhelmed at the application-layer;

13           exocusterly deactivating one or more members identified by the  
14 identifying.

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16           **25. (ORIGINAL)** A method as recited in claim 21, wherein the  
17 controlling comprises selectively activating one or more inactive members of the  
18 load-balancing cluster.

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20           **26. (ORIGINAL)** A method as recited in claim 21, wherein the  
21 controlling comprises, based upon the monitoring, identifying one or more  
22 inactive members of the cluster that are not presently overwhelmed at the  
23 application-layer.  
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1           **27. (ORIGINAL)** A method as recited in claim 21, wherein the  
2 controlling comprises:

3           based upon the monitoring, identifying one or more inactive members of  
4 the cluster that are not presently overwhelmed at the application-layer;  
5           exocusterly activating one or more members identified by the identifying.  
6

7           **28. (ORIGINAL)** A method as recited in claim 21, wherein the  
8 controlling comprises:

9           based upon the monitoring, identifying one or more active members of the  
10 cluster that are presently overwhelmed at the application-layer and identifying one  
11 or more inactive members of the cluster that are not presently overwhelmed at the  
12 application-layer;

13           exocusterly deactivating one or more active members identified by the  
14 identifying;

15           exocusterly activating one or more inactive members identified by the  
16 identifying.  
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18           **29. (ORIGINAL)** A method as recited in claim 21 further comprising  
19 determining a present activity state of the members of the cluster.  
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21           **30. (ORIGINAL)** A method as recited in claim 21 further comprising:  
22 determining a present activity state of the members of the cluster;  
23 tracking and persisting the activity states of the members of the cluster.  
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1           **31. (ORIGINAL)** A method as recited in claim 30, wherein the activity  
2 state includes a cluster state.

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4           **32. (ORIGINAL)** A method as recited in claim 30 further comprising  
5 reporting a present activity state of one or more members of the cluster.

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7           **33. (ORIGINAL)** A method as recited in claim 30 further comprising  
8 reporting historical record of the activity states of one or more members of the  
9 cluster.

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11           **34. (ORIGINAL)** A method as recited in claim 30 further comprising  
12 reporting a present application-layer state of one or more members of the cluster.

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14           **35. (ORIGINAL)** A method as recited in claim 30 further comprising  
15 reporting historical record of the application-layer states of one or more members  
16 of the cluster.

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18           **36. (ORIGINAL)** A method as recited in claim 21, wherein the  
19 monitoring comprises monitoring in one or more different application-layer  
20 protocols.



1           37.    (ORIGINAL)   A computer-readable medium having computer-  
2 executable instructions that, when executed by a computer, performs the method  
3 as recited in claim 21.

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5           38.    (CURRENTLY AMENDED)   A computer-readable medium having  
6 computer-executable instructions that, when executed by a computer, perform a  
7 method comprising:

8               dynamically determining present members of a load-balancing cluster  
9 which includes nodes and a node manager and an activity state of each member;

10              monitoring application-layer availability of the one or more members of the  
11 cluster as such availability is observed ~~from a client perspective~~ by the computer  
12 outside of the cluster which is communicatively linked to the node manager in the  
13 cluster, such that the monitoring is from a client perspective to detect an error that  
14 may impact the application-layer availability as it appears to the computer from  
15 outside of the cluster; and

16              exocusterly controlling the activity state of the members of the cluster.  
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1           **39. (CURRENTLY AMENDED)** A system comprising:

2           a dynamic cluster-membership determiner configured to exocusterly and  
3           dynamically determine present members of a load-balancing cluster which  
4           includes nodes and a node manager; and

5           an exocuster monitor configured to monitor application-layer availability  
6           of the present members of the cluster, the exocuster monitor distributed across  
7           one or more clients outside of the cluster which are communicatively linked to the  
8           node manager in the cluster, such that monitoring is from a client perspective to  
9           detect an error that may impact the application-layer availability as it appears to  
10          the one or more clients from outside of the cluster.

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12          **40. (ORIGINAL)** A system as recited in claim 39 further comprising an  
13          exocuster controller configured to control an activity state of the members of the  
14          cluster.

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16          **41. (ORIGINAL)** A system as recited in claim 39 further comprising an  
17          overload-identifier configured to identify, based upon the monitored availability,  
18          one or more active members of the cluster that are presently overwhelmed at the  
19          application-layer.  
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1           **42. (ORIGINAL)** A system as recited in claim 39 further comprising an  
2 overload-identifier configured to identify, based upon the monitored availability,  
3 one or more inactive members of the cluster that are not presently overwhelmed at  
4 the application-layer.

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6           **43. (ORIGINAL)** A system as recited in claim 39 further comprising a  
7 state-determiner configured to determine a present activity state of members of the  
8 cluster.

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10          **44. (ORIGINAL)** A system as recited in claim 39 further comprising:  
11 a state-determiner configured to determine a present activity state of  
12 members of the cluster;

13 a database configured to store the activity states of the members of the  
14 cluster.

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16          **45. (PREVIOUSLY PRESENTED)** A system as recited in claim 39,  
17 wherein the exocluster monitor is protocol agnostic.

1           **46. (CURRENTLY AMENDED)** A system comprising:

2           an exocluster monitor configured to monitor application-layer availability  
3 of members of a load-balancing cluster ~~from a client perspective~~ which includes  
4 nodes and a node manager, the exocluster monitor distributed across one or more  
5 clients outside of the cluster which are communicatively linked to the node  
6 manager in the cluster, such that monitoring is from a client perspective to detect  
7 an error that may impact the application-layer availability as it appears to the one  
8 or more clients from outside of the cluster; and

9           an exocluster controller configured to control an activity state of members  
10 of the cluster.

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12           **47. (ORIGINAL)** A system as recited in claim 46, wherein the  
13 exocluster controller is further configured to exocusterly and selectively  
14 deactivate one or more active members of the cluster.

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16           **48. (ORIGINAL)** A system as recited in claim 46 further comprising an  
17 overload-identifier configured to identify, based upon the monitored availability,  
18 one or more active members of the cluster that are presently overwhelmed at the  
19 application-layer.

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21           **49. (ORIGINAL)** A system as recited in claim 46, wherein the  
22 exocluster controller is further configured to exocusterly and selectively activate  
23 one or more inactive members of the cluster.  
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1           **50. (ORIGINAL)** A system as recited in claim 46 further comprising an  
2 overload-identifier configured to identify, based upon the monitored availability,  
3 one or more inactive members of the cluster that are not presently overwhelmed at  
4 the application-layer.

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6           **51. (ORIGINAL)** A system as recited in claim 46 further comprising a  
7 state-determiner configured to determine a present activity state of the members of  
8 the cluster.

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10          **52. (ORIGINAL)** A system as recited in claim 46 further comprising:  
11 a state-determiner configured to determine a present activity state of the  
12 members of the cluster;  
13 a database configured to store the activity states of the members of the  
14 cluster.

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16          **53. (ORIGINAL)** A system as recited in claim 46, wherein the monitor  
17 is protocol agnostic.  
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1       **54. (CURRENTLY AMENDED)** A dynamic, active, exocluster  
2 monitoring system for monitoring application-layer availability of members of a  
3 load-balancing cluster and for controlling an activity state of such members, the  
4 monitoring system comprising:

5       an app-monitor configured to exocusterly monitor the members of the  
6 cluster which includes nodes and a node manager, from a client perspective the  
7 app-monitor distributed across one or more clients outside of the cluster which are  
8 communicatively linked to the node manager in the cluster, such that monitoring is  
9 from a client perspective to detect an error that may impact the application-layer  
10 availability as it appears to the one or more clients from outside of the cluster;

11       a cluster-control configured to exocusterly determine the activity state of  
12 the members of the cluster and to exocusterly control the activity state of the  
13 members of the cluster; and

14       a central controller configured to coordinate and control the app-monitor  
15 and the cluster-control.

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17       **55. (ORIGINAL)** A system as recited in claim 54 further comprising a  
18 database configured to store state change information, including cluster state and  
19 application-layer state.

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21       **56. (ORIGINAL)** A system as recited in claim 54 further comprising  
22 multiple app-monitors.  
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1           **57. (ORIGINAL)** A system as recited in claim 54 further comprising  
2 multiple cluster-controls.

3           back response data to the client.  
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